**INTEROFFICE CORRESPONDENCE**

DATE: October 6, 1993

TO: D. L. Schubbe, Remediations Projects Mgmt., Bldg. 080, X8709  
*M.D.S.*

FROM: M. D. Schreckengast, Industrial Hygiene, Bldg. T452G, X6790

SUBJECT: BERYLLIUM SMEAR RESULTS FOR BUILDING 883, ROOM 104 - MDS-013-93

This letter details results of the beryllium smear surveys collected in Building 883, Room 104 (Individual Hazardous Substance Site [IHSS] 104).<sup>180</sup>

On August 25, 1993, 54 smears were collected by Radiological Operations during the initial pre-job survey (see Attachment 1 for the map and Attachment 2 for smear results). Four of these 54 smears taken indicated beryllium above the beryllium smear control level of 25 micrograms per square foot (ug/ft<sup>2</sup>), as stipulated in the Rocky Flats Plant Beryllium Protection Program, 1-15310-HSP-13.04.

On August 26, 1993, the second pre-job survey was conducted by Radiological Operations. Prior to this survey, the survey grid pattern was altered to include 49 square meter areas instead of 55 (see Attachment 3 for the map and Attachment 4 for smear results). Five of the 49 smears indicated beryllium above the beryllium smear control level.

On September 7, 1993, the post-job smear survey was performed by Radiological Operations. Nine of the 49 smears indicated significantly higher levels of beryllium (see Attachment 5).

Because post-job survey smears indicated beryllium levels above 25 ug/ft<sup>2</sup>, building personnel are required to decontaminate the area and re-smear for beryllium. R. T. Stagner, 883 Building Manager, has been notified of these requirements.

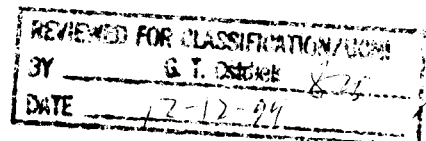
If you have any questions regarding this matter, please feel free to call me.

vgm

Attachments:  
As Stated

cc w/o Att: *all for JMB*  
J. M. Brooks  
B. M. Clausen  
J. G. Kroll */K*

O. McAfee  
L. A. Nelowet  
D. R. Sweet





## INTEROFFICE CORRESPONDENCE

DATE: October 5, 1993

TO: R. T. Stagner, 800 Area Operations, Bldg. 881, X5395  
*M.D.S.*

FROM: M. D. Schreckengast, Industrial Hygiene, Bldg. T452G, X6790

SUBJECT: BERYLLIUM SMEAR RESULTS FOR BUILDING 883, ROOM 104 - MDS-012-93

### INTRODUCTION:

Within the past few months, Phase I RFI/RI (Resource Conservation and Recovery Act [RCRA] Facility Investigation [RFI]/ Remedial Investigation [RI]) work has begun on the Operable Unit (OU) 15 project. Included in OU 15 is the drum storage area deemed Individual Hazardous Substance Site (IHSS) 180, in Building 881, Room 104. Phase I work involves several activities in each of the IHSSs, including an initial pre-job smear survey, a second pre-job smear survey, hot rinsate sampling, and a post-job smear survey. Because building 883 has been involved with beryllium in the past, all smears were analyzed for beryllium. This letter details those results.

### CONCLUSION:

All three smear surveys indicated beryllium levels above the 25 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) beryllium smear control level. This area must be decontaminated and re-smearred in order to verify beryllium removal.

### FINDINGS/DISCUSSION:

On August 25, 1993, Radiological Operations conducted the initial pre-job survey at IHSS 180 in Building 883, Room 104. The area of study was divided into 55 square meters, 1-54 were smeared. Please refer to the map provided in Attachment 1 and the results provided in Attachment 2. After this survey, the grid pattern was altered and 49 square meter areas instead of 55 were identified for sampling.

On August 26, 1993, Radiological Operations conducted the second pre-job survey. Please refer to the map provided in Attachment 3 and the results provided in Attachment 4.

R. T. Stagner  
October 6, 1993  
MDS-012-93  
Page 2

After this survey, hot rinsate sampling was performed by ERM-Rocky Mountain over all 49 identified sample square meter areas. Last, the post-job smear survey was conducted by Radiological Operations on September 7, 1993. Please refer to the results provided in Attachment 5.

The Rocky Flats Plant Beryllium Protection Program, 1-15310-HSP-13.04, establishes 25  $\mu\text{g}/\text{ft}^2$  as the beryllium smear control level. Four smears from the initial pre-job survey, five from the second pre-job survey, and nine from the post-job survey indicated beryllium levels above the 25  $\mu\text{g}/\text{ft}^2$  beryllium smear control level. Results from the three surveys are not consistent as to location of contamination. Reasons for these discrepancies may include current building foot traffic spreading/moving contamination, different locations of the 100 square centimeter smear areas inside the square meter areas, etc.

Procedure 1-15310-HSP-13.04 requires that areas having levels above 25  $\mu\text{g}/\text{ft}^2$  be decontaminated, and then re-smear and re-counted for beryllium. Please mark the area with tape, barriers, etc., to eliminate spread of the contamination; and arrange for decontamination and another smear survey to verify decontamination.

Employees involved in the decontamination must have completed Beryllium Operations Training within the past two years. Personal protective equipment requirements for decontamination include: 1) a half-mask or full-face respirator equipped with high efficiency particulate (HEPA) cartridges, 2) tyvek coveralls worn over whites, and 3) surgeons gloves.

If you have any questions or concerns, please contact me at Extension 6790.

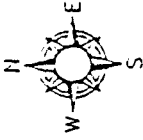
vgm

Attachments:  
As Stated

cc w/o Att:  
J. M. Brooks  
B. M. Clausen  
L. A. Holwager *SAH*  
J. G. Kroll *JK*  
O. McAfee - w/Att  
L. A. Nelowet  
D. L. Schubbe  
D. R. Sweet

NOTES

1)



40' <FIELD> LATER TURNED ON  
<FIELD> LATER TURNED ON

20'

0

20'

DATE :

CHECKED BY :

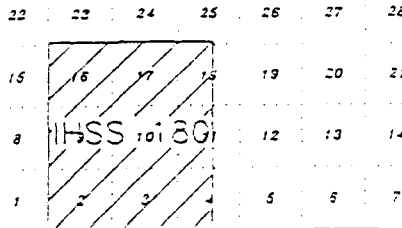
CHECKED BY :

ROOM 104

ROOM 104A

ROOM 135

SCALE



FLOOR AREA: = 4091.1'

KEYWORDS	ALL ORIGINAL ISSUE	XX/XX/93	POSITION	DATE	93	DOE CLASS	408 NO.
1. XXXX	DESIGN	DESCRIPTION	DATE	93	DOE CLASS	408 NO.	
2. XXXX	DESIGNED	HEA	11/10/93				
3. XXXX	DRAWN	LDNIE	11/10/93				
4. XXXX	CHECKED	LAUGUST	11/10/93				
5. XXXX	APPROVED	HUGHES	11/10/93				
6. XXXX	DOE/ADULT	383					
7. XXXX	ROOM AREA	104					
8. XXXX	ONE COOL/CL AL						
MASTER		SCALE	APPROVED	DATE	93	DRAWING NUMBER	SHEET
H 11 0 03		NOZ	BY	11/10/93	93	104	1

LI AIR SAMPLE

☒ SMEAR SAMPLE  
☒ SPECIAL SAMPLE

883, Special

ROCKY FLATS PLANT

Send Results To INDUSTRIAL HYGIENE  
 X 2780

NAME

King / Clausen

BERYLLIUM SAMPLE LOG

Date Collected: 8-25-73

Lab No. 81421

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	DATE		TIME		ON	OFF	ON	OFF	ΔT MIN	FLOW RATE	VOL OR AREA	SAMPLE μg	μg/ft <sup>2</sup> μg/m <sup>3</sup>
				ON	OFF	ON	OFF									
1	883	104	See attached map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<10
2															<1	<10
3															<1	<10
4															<1	<10
5															<1	<10
6															<1	<10
7															<1	<10
8															<1	<10
9															<1	<10
10															<1	<10
11															<1	<10
12															<1	<10
13															<1	<10
14															<1	<10
15															<1	<10
16															<1	<10
17															<1	<10
18															<1	<10
19															<1	<10
20															<1	<10
21															<1	<10
22															<1	<10
23															<1	<10
24															<1	<10
25															<1	<10
26															<1	<10

☒ SMEAR SAMPLE  
☐ SPECIAL SAMPLE 383 Special

BERYLLIUM SAMPLE LOG

NAME \_\_\_\_\_ Date Collected: 8-25-93 Lab No. 4441

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	DATE				TIME				ΔT MIN	FLOW RATE	VOL OR AREA	SAMPLE μg	μg/ft <sup>2</sup> μg/m <sup>3</sup>
				ON	OFF	ON	OFF	ON	OFF	ON	OFF					
27	383	104	See Attached map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	~100cm <sup>2</sup>	6	56
28															<1	<10
29															<1	<10
30															<1	<10
31															<1	<10
32															<1	<10
33															<1	<10
34															<1	<10
35															<1	<10
36															<1	<10
37															3	28
38			Near the scale												1	10
39															<1	<10
40															<1	<10
41															<1	<10
42			Near the scale												<1	<10
43															<1	<10
44															10	93
45															10	93
46															<1	<10
47															<1	<10
48															<1	<10
49															2	19
50															<1	<10
51															<1	<10
52															<1	<10

INDUSTRIAL HYGIENE COPY

☒ SPECIAL SAMPLE

X 2780

Lab No. \_\_\_\_\_

[illegible]

INDUSTRIAL HYGIENE COPY

PC

40' FIELD LAYER TUBED ON  
<FIELD> LAYER TUBED ON

20' 0 20' 40'

0

20'

DATE :

CIRCUIT BY :

CIRCUIT PRINT NO :



## NOTES

1)

ROOM 104

ROOM  
104AROOM  
135

SCALE

FLOOR AREA: = 4091.1'

KEYWORDS	A	ORIGINAL ISSUE	XX/XX/93	DATE	REV	DOE CLASS	JOB NO.
1. XXXX	1	DESCRIPTION	DATE	REV	DOE CLASS	JOB NO.	
2. XXXX	2	DESIGNED	DATE	REV	DOE CLASS	JOB NO.	
3. XXXX	3	DRAWN	DATE	REV	DOE CLASS	JOB NO.	
4. XXXX	4	CHECKED	DATE	REV	DOE CLASS	JOB NO.	
5. XXXX	5	APPROVED	DATE	REV	DOE CLASS	JOB NO.	
6. XXXX	6	REVISION	DATE	REV	DOE CLASS	JOB NO.	
7. XXXX	7	REVISION	DATE	REV	DOE CLASS	JOB NO.	
8. XXXX	8	REVISION	DATE	REV	DOE CLASS	JOB NO.	
9. XXXX	9	REVISION	DATE	REV	DOE CLASS	JOB NO.	
10. XXXX	10	REVISION	DATE	REV	DOE CLASS	JOB NO.	
11. XXXX	11	REVISION	DATE	REV	DOE CLASS	JOB NO.	
12. XXXX	12	REVISION	DATE	REV	DOE CLASS	JOB NO.	
13. XXXX	13	REVISION	DATE	REV	DOE CLASS	JOB NO.	
14. XXXX	14	REVISION	DATE	REV	DOE CLASS	JOB NO.	
15. XXXX	15	REVISION	DATE	REV	DOE CLASS	JOB NO.	
16. XXXX	16	REVISION	DATE	REV	DOE CLASS	JOB NO.	
17. XXXX	17	REVISION	DATE	REV	DOE CLASS	JOB NO.	
18. XXXX	18	REVISION	DATE	REV	DOE CLASS	JOB NO.	
19. XXXX	19	REVISION	DATE	REV	DOE CLASS	JOB NO.	
20. XXXX	20	REVISION	DATE	REV	DOE CLASS	JOB NO.	
21. XXXX	21	REVISION	DATE	REV	DOE CLASS	JOB NO.	
22. XXXX	22	REVISION	DATE	REV	DOE CLASS	JOB NO.	
23. XXXX	23	REVISION	DATE	REV	DOE CLASS	JOB NO.	
24. XXXX	24	REVISION	DATE	REV	DOE CLASS	JOB NO.	
25. XXXX	25	REVISION	DATE	REV	DOE CLASS	JOB NO.	
26. XXXX	26	REVISION	DATE	REV	DOE CLASS	JOB NO.	
27. XXXX	27	REVISION	DATE	REV	DOE CLASS	JOB NO.	
28. XXXX	28	REVISION	DATE	REV	DOE CLASS	JOB NO.	
29. XXXX	29	REVISION	DATE	REV	DOE CLASS	JOB NO.	
30. XXXX	30	REVISION	DATE	REV	DOE CLASS	JOB NO.	
31. XXXX	31	REVISION	DATE	REV	DOE CLASS	JOB NO.	
32. XXXX	32	REVISION	DATE	REV	DOE CLASS	JOB NO.	
33. XXXX	33	REVISION	DATE	REV	DOE CLASS	JOB NO.	
34. XXXX	34	REVISION	DATE	REV	DOE CLASS	JOB NO.	
35. XXXX	35	REVISION	DATE	REV	DOE CLASS	JOB NO.	
36. XXXX	36	REVISION	DATE	REV	DOE CLASS	JOB NO.	
37. XXXX	37	REVISION	DATE	REV	DOE CLASS	JOB NO.	
38. XXXX	38	REVISION	DATE	REV	DOE CLASS	JOB NO.	
39. XXXX	39	REVISION	DATE	REV	DOE CLASS	JOB NO.	
40. XXXX	40	REVISION	DATE	REV	DOE CLASS	JOB NO.	
41. XXXX	41	REVISION	DATE	REV	DOE CLASS	JOB NO.	
42. XXXX	42	REVISION	DATE	REV	DOE CLASS	JOB NO.	
43. XXXX	43	REVISION	DATE	REV	DOE CLASS	JOB NO.	
44. XXXX	44	REVISION	DATE	REV	DOE CLASS	JOB NO.	
45. XXXX	45	REVISION	DATE	REV	DOE CLASS	JOB NO.	
46. XXXX	46	REVISION	DATE	REV	DOE CLASS	JOB NO.	
47. XXXX	47	REVISION	DATE	REV	DOE CLASS	JOB NO.	
48. XXXX	48	REVISION	DATE	REV	DOE CLASS	JOB NO.	
49. XXXX	49	REVISION	DATE	REV	DOE CLASS	JOB NO.	
50. XXXX	50	REVISION	DATE	REV	DOE CLASS	JOB NO.	
51. XXXX	51	REVISION	DATE	REV	DOE CLASS	JOB NO.	
52. XXXX	52	REVISION	DATE	REV	DOE CLASS	JOB NO.	
53. XXXX	53	REVISION	DATE	REV	DOE CLASS	JOB NO.	
54. XXXX	54	REVISION	DATE	REV	DOE CLASS	JOB NO.	
55. XXXX	55	REVISION	DATE	REV	DOE CLASS	JOB NO.	
56. XXXX	56	REVISION	DATE	REV	DOE CLASS	JOB NO.	
57. XXXX	57	REVISION	DATE	REV	DOE CLASS	JOB NO.	
58. XXXX	58	REVISION	DATE	REV	DOE CLASS	JOB NO.	
59. XXXX	59	REVISION	DATE	REV	DOE CLASS	JOB NO.	
60. XXXX	60	REVISION	DATE	REV	DOE CLASS	JOB NO.	
61. XXXX	61	REVISION	DATE	REV	DOE CLASS	JOB NO.	
62. XXXX	62	REVISION	DATE	REV	DOE CLASS	JOB NO.	
63. XXXX	63	REVISION	DATE	REV	DOE CLASS	JOB NO.	
64. XXXX	64	REVISION	DATE	REV	DOE CLASS	JOB NO.	
65. XXXX	65	REVISION	DATE	REV	DOE CLASS	JOB NO.	
66. XXXX	66	REVISION	DATE	REV	DOE CLASS	JOB NO.	
67. XXXX	67	REVISION	DATE	REV	DOE CLASS	JOB NO.	
68. XXXX	68	REVISION	DATE	REV	DOE CLASS	JOB NO.	
69. XXXX	69	REVISION	DATE	REV	DOE CLASS	JOB NO.	
70. XXXX	70	REVISION	DATE	REV	DOE CLASS	JOB NO.	
71. XXXX	71	REVISION	DATE	REV	DOE CLASS	JOB NO.	
72. XXXX	72	REVISION	DATE	REV	DOE CLASS	JOB NO.	
73. XXXX	73	REVISION	DATE	REV	DOE CLASS	JOB NO.	
74. XXXX	74	REVISION	DATE	REV	DOE CLASS	JOB NO.	
75. XXXX	75	REVISION	DATE	REV	DOE CLASS	JOB NO.	
76. XXXX	76	REVISION	DATE	REV	DOE CLASS	JOB NO.	
77. XXXX	77	REVISION	DATE	REV	DOE CLASS	JOB NO.	
78. XXXX	78	REVISION	DATE	REV	DOE CLASS	JOB NO.	
79. XXXX	79	REVISION	DATE	REV	DOE CLASS	JOB NO.	
80. XXXX	80	REVISION	DATE	REV	DOE CLASS	JOB NO.	
81. XXXX	81	REVISION	DATE	REV	DOE CLASS	JOB NO.	
82. XXXX	82	REVISION	DATE	REV	DOE CLASS	JOB NO.	
83. XXXX	83	REVISION	DATE	REV	DOE CLASS	JOB NO.	
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85. XXXX	85	REVISION	DATE	REV	DOE CLASS	JOB NO.	
86. XXXX	86	REVISION	DATE	REV	DOE CLASS	JOB NO.	
87. XXXX	87	REVISION	DATE	REV	DOE CLASS	JOB NO.	
88. XXXX	88	REVISION	DATE	REV	DOE CLASS	JOB NO.	
89. XXXX	89	REVISION	DATE	REV	DOE CLASS	JOB NO.	
90. XXXX	90	REVISION	DATE	REV	DOE CLASS	JOB NO.	
91. XXXX	91	REVISION	DATE	REV	DOE CLASS	JOB NO.	
92. XXXX	92	REVISION	DATE	REV	DOE CLASS	JOB NO.	
93. XXXX	93	REVISION	DATE	REV	DOE CLASS	JOB NO.	
94. XXXX	94	REVISION	DATE	REV	DOE CLASS	JOB NO.	
95. XXXX	95	REVISION	DATE	REV	DOE CLASS	JOB NO.	
96. XXXX	96	REVISION	DATE	REV	DOE CLASS	JOB NO.	
97. XXXX	97	REVISION	DATE	REV	DOE CLASS	JOB NO.	
98. XXXX	98	REVISION	DATE	REV	DOE CLASS	JOB NO.	
99. XXXX	99	REVISION	DATE	REV	DOE CLASS	JOB NO.	
100. XXXX	100	REVISION	DATE	REV	DOE CLASS	JOB NO.	

104



☐ AIR SAMPLE  
☒ SMEAR SAMPLE  
☒ SPECIAL SAMPLE

883 Special

ROCKY FLATS PLANT

Send Results To INDUSTRIAL HYGIENE  
X 2780

NAME

Date Collected: 8-26-93

Lab No. 444

BERYLLIUM SAMPLE LOG

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	DATE				TIME				ΔT MIN	FLOW RATE	VOLUME AREA	SAMPLE μg	μg/m <sup>3</sup>
				ON	OFF	ON	OFF	ON	OFF	ON	OFF					
1	883	104	See attached map.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100m <sup>2</sup>	<1	<10
2															<1	<10
3															<1	<10
4															1	280 <sup>mL</sup>
5															3	280 <sup>mL</sup>
6															<1	<10
7															<1	<10
8															<1	<10
9															<1	<10
10															1	280 <sup>mL</sup>
11															<1	<10
12															<1	<10
13															<1	<10
14															<1	<10
15															<1	<10
16															<1	<10
17															<1	<10
18															<1	<10
19															<1	<10
20															3	280 <sup>mL</sup>
21															1	9
22															<1	<10
23															<1	<10
24															<1	<10
25															<1	<10
26															4	37

☒ SMEAR SAMPLE  
☒ SPECIAL SAMPLE

883-Special

BERYLLIUM SAMPLE LOG

NAME

Date Collected: 8-26-93

Lab No. 61414

DATE TIME

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	ON	OFF	ON	OFF	ΔT MIN	FLOW RATE	VOL OR AREA	SAMPLE μg	μg/m <sup>3</sup>
27	883	104	See attached map	N/A	N/A	N/A	N/A	N/A	N/A	100 m <sup>2</sup>	<1	<10
28											<1	<10
29											<1	<10
30											<1	<10
31											<1	<10
32											<1	<10
33											<1	<10
34											<1	<10
35											1	9
36											4	37
37											<1	<10
38											<1	<10
39											<1	<10
40											<1	<10
41											<1	<10
42											<1	<10
43											<1	<10
44											<1	<10
45											14	130
46											<1	<10
47											<1	<10
48											<1	<10
49											1	9
											<1	<10

- ☐ AIR SAMPLE
- ☐ SMEAR SAMPLE
- ☐ SPECIAL SAMPLE

883 Taken 9/1/93

BERYLLIUM SAMPLE LOG

Lab No. 56457

NAME Becker / C. A. Jensen

Date Collected: 9/2/93

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	DATE			TIME			ΔT MIN	FLOW RATE	VOL OR AREA	SAMPLE μg	μg/m <sup>3</sup>
				ON	OFF	ON	OFF	ON	OFF					
1	883	104	See map. Appendix 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100cm <sup>2</sup>	1	9
2													<1	<10
3													<1	<10
4													<1	<10
5													<1	<10
6													<1	<10
7													2	19
8													<1	<10
9													<1	<10
10													<1	<10
11													<1	<10
12													<1	<10
13													<1	<10
14													<1	<10
15													<1	<10
16													<1	<10
17													<1	<10
18													<1	<10
19													<1	<10
20													<1	<10
21													<1	<10
22													<1	<10
23													3	28
24													<1	<10
25													<1	<10
26													<1	<10

☒ SMEAR SAMPLE

☒ SPECIAL SAMPLE

883 TAKEN 9/1/83

BERYLLIUM SAMPLE LOG

NAME BERNAL

Chausen

Date Collected: 9/1/83

DATE

TIME

Lab No BER 21

SAMPLE NO.	BLDG.	ROOM	DESCRIPTION	ON	OFF	ON	OFF	AT MIN	FLOW RATE	VOLOR AREA	SAMPLE $\mu\text{g}$	$\mu\text{g}/\text{m}^3$
27	883	101	See Map Appendix B	N/A	N/A	N/A	N/A	N/A	N/A	100.00	<1	<10
28											<1	<10
29											<1	<10
30											<1	<10
31											3	28
32											<1	<10
33											23	214
34											2	19
35											8	74
36											6	56
37											<1	<10
38											6	56
39											<1	<10
40											<1	<10
41											2	19
42											<1	<10
43											<1	<10
44											<1	<10
45											<1	<10
46											23	251
47											33	307
48											127	130
49											1	9